

Application No.: 10/712589

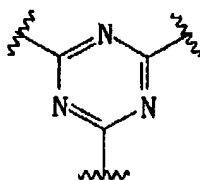
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Amendments to the Claims:

The following Listing of Claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Original) A polymer electrolyte membrane comprising a highly fluorinated polymer comprising: a perfluorinated backbone, first pendent groups which comprise sulfonic acid groups, and crosslinks comprising trivalent groups according to the formula:



(1).

2. (Original) The polymer electrolyte membrane according to claim 1 wherein said first pendent groups are according to the formula: $-R^1-SO_3H$, where R^1 is a branched or unbranched perfluoroalkyl or perfluoroether group comprising 1-15 carbon atoms and 0-4 oxygen atoms.
3. (Original) The polymer electrolyte membrane according to claim 1 wherein said first pendent groups are according to the formula: $-O-CF_2-CF_2-CF_2-CF_2-SO_3H$.
4. (Original) The polymer electrolyte membrane according to claim 1 wherein said first pendent groups are according to the formula: $-O-CF_2-CF(CF_3)-O-CF_2-CF_2-SO_3H$.
5. (Original) A method of making a polymer electrolyte membrane comprising the steps of:
- providing a highly fluorinated polymer comprising: a perfluorinated backbone, first pendent groups which comprise sulfonyl halide groups, and second pendent groups which comprise nitrile groups;
 - forming said fluoropolymer into a membrane;
 - trimerizing said nitrile groups to form crosslinks; and
 - converting said sulfonyl halide groups to sulfonic acid groups.

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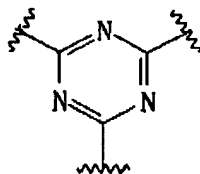
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6. (Original) The method according to claim 5 wherein said second pendent groups are selected from $-C\equiv N$ and groups according to the formula: $-R^1-C\equiv N$, where R^1 is a branched or unbranched perfluoroalkyl or perfluoroether group comprising 1-15 carbon atoms and 0-4 oxygen atoms.
7. (Original) The method according to claim 5 wherein said first pendent groups are according to the formula: $-R^1-SO_2X$, where X is a halogen and where R^1 is a branched or unbranched perfluoroalkyl or perfluoroether group comprising 1-15 carbon atoms and 0-4 oxygen atoms.
8. (Original) The method according to claim 6 wherein said first pendent groups are according to the formula: $-R^1-SO_2X$, where X is a halogen and where R^1 is a branched or unbranched perfluoroalkyl or perfluoroether group comprising 1-15 carbon atoms and 0-4 oxygen atoms.
9. (Original) The method according to claim 7 wherein said first pendent groups are according to the formula: $-O-CF_2-CF_2-CF_2-CF_2-SO_2X$.
10. (Original) The method according to claim 8 wherein said first pendent groups are according to the formula: $-O-CF_2-CF_2-CF_2-CF_2-SO_2X$.
11. (Original) The method according to claim 7 wherein said first pendent groups are according to the formula: $-O-CF_2-CF(CF_3)-O-CF_2-CF_2-SO_2X$.
12. (Original) The method according to claim 8 wherein said first pendent groups are according to the formula: $-O-CF_2-CF(CF_3)-O-CF_2-CF_2-SO_2X$.
13. (Original) A polymer electrolyte membrane made according to the method of claim 5.

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14. (Original) A polymer electrolyte membrane made according to the method of claim 6.
15. (Original) A polymer electrolyte membrane made according to the method of claim 7.
16. (Original) A polymer electrolyte membrane made according to the method of claim 8.
17. (Original) A polymer electrolyte membrane made according to the method of claim 9.
18. (Original) A polymer electrolyte membrane made according to the method of claim 10.
19. (Original) A polymer electrolyte membrane made according to the method of claim 11.
20. (Original) A polymer electrolyte membrane made according to the method of claim 12.
21. (Original) A polymer membrane comprising a highly fluorinated polymer comprising: a perfluorinated backbone, first pendent groups which comprise groups according to the formula $-SO_2X$, where X is F, Cl, Br, OH, or $-O-M^+$, where M^+ is a monovalent cation, and crosslinks comprising trivalent groups according to the formula:



(I).

22. (Currently Amended) The polymer membrane according to ~~claim 1~~ claim 21 wherein said first pendent groups are according to the formula: $-R^1-SO_2X$, where R^1 is a branched or unbranched perfluoroalkyl or perfluoroether group comprising 1-15 carbon atoms and 0-4 oxygen atoms.

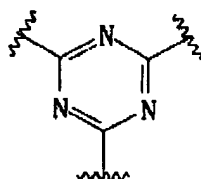
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23. (Currently Amended) The polymer membrane according to ~~claim 1~~ claim 21 wherein said first pendent groups are according to the formula: $-O-CF_2-CF_2-CF_2-CF_2-SO_2X$.

24. (Currently Amended) The polymer membrane according to ~~claim 1~~ claim 21 wherein said first pendent groups are according to the formula: $-O-CF_2-CF(CF_3)-O-CF_2-CF_2-SO_2X$.

25. (Original) A polymer comprising a highly fluorinated polymer comprising: a perfluorinated backbone, first pendent groups which comprise groups according to the formula $-SO_2X$, where X is F, Cl, Br, OH, or $-O-M^+$, where M^+ is a monovalent cation, and crosslinks comprising trivalent groups according to the formula:



(I).

26. (Currently Amended) The polymer according to ~~claim 1~~ claim 25 wherein said first pendent groups are according to the formula: $-R^1-SO_2X$, where R^1 is a branched or unbranched perfluoroalkyl or perfluoroether group comprising 1-15 carbon atoms and 0-4 oxygen atoms.

27. (Currently Amended) The polymer according to ~~claim 1~~ claim 25 wherein said first pendent groups are according to the formula: $-O-CF_2-CF_2-CF_2-CF_2-SO_2X$.

28. (Currently Amended) The polymer according to ~~claim 1~~ claim 25 wherein said first pendent groups are according to the formula: $-O-CF_2-CF(CF_3)-O-CF_2-CF_2-SO_2X$.